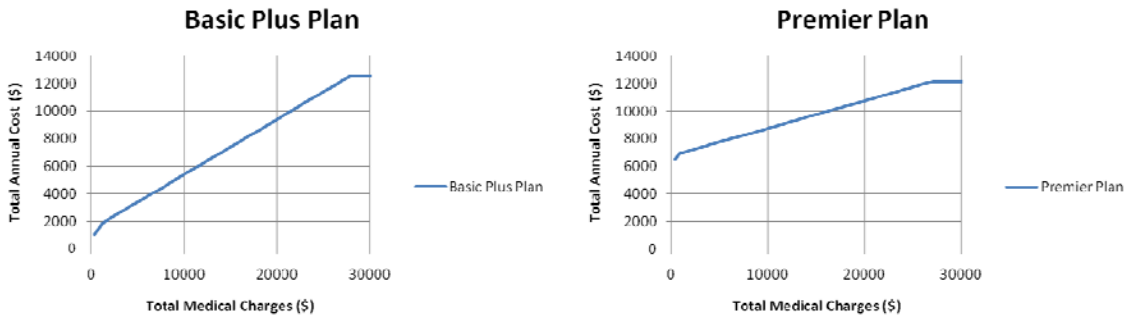
In earlier technology assignments, you identified several details of two different health plans and used those details to make a table. In this technology assignment, graph the data in your Excel worksheet. This tech assignment assumes you have completed the tech assignment Collect and Organize Data as well as the tech assignment Calculate the Total Annual Cost.

At the conclusion of the Calculate the Total Annual Cost tech assignment, you had a table for each of the two health plans you are working with. Your tables should look similar to the one below for the Basic Plus Health Plan. You may have slightly different columns and rows, but you should have a column corresponding to the Total Medical Charges and a column corresponding to the Total Cost.

	A	B	C	D	E	F	G
1	**Basic Plus Plan**						
2							
3	Total Medical Charges	Prescription Charges	Total Medical Cost	Prescription Cost	Total Out of Pocket	Premium Cost	Total Cost
4	350	360	350	120	470	552	1022
5	850	360	850	120	970	552	1522
6	1200	360	1200	120	1320	552	1872
7	4200	360	2400	120	2520	552	3072
8	7200	360	3600	120	3720	552	4272
9	10200	360	4800	120	4920	552	5472
10	13200	360	6000	120	6120	552	6672
11	16200	360	7200	120	7320	552	7872
12	19200	360	8400	120	8520	552	9072
13	22200	360	9600	120	9720	552	10272
14	25200	360	10800	120	10920	552	11472
15	27900	360	11880	120	12000	552	12552
16	31200	360	13200	120	12000	552	12552

You may not have these columns located in the same place (ie. your Total Cost column may not be called G), but you should be able to follow the instructions below to create graph of the data in your table.

The goal of this assignment is to graph data from each table you created in an earlier tech assignment and to make graphs similar to the ones below.



To receive full credit on this assignment, your graphs must include the following characteristics:

- Each model accurately reflects the health insurance plans you have chosen.
- A legend on the right indicating the name of each health plan. You may abbreviate the names to allow them to fit better.
- Horizontal and vertical gridlines.
- Labels on the horizontal and vertical axes.

To accomplish this goal, we'll first create a graph for each of your plans and then combine the graphs together into a single graph like the one shown above.

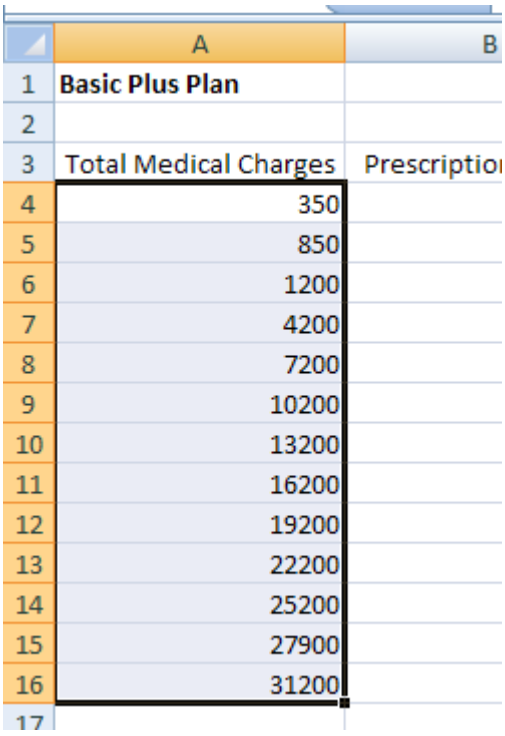
Make a Graph for Each Health Plan

1. Open the worksheet you have been using for earlier technology assignments.

2. Click on the worksheet for the first health plan. In the example we have been working on, this would be the worksheet for the Basic Plus Plan.

3. Locate the column corresponding to the Total Medical Charges. For the worksheet pictured below, this column is in column A. Click the mouse button in the cell containing the first numerical entry in this column, A4. To indicate that you have selected this cell, you'll see a black outline around the cell.

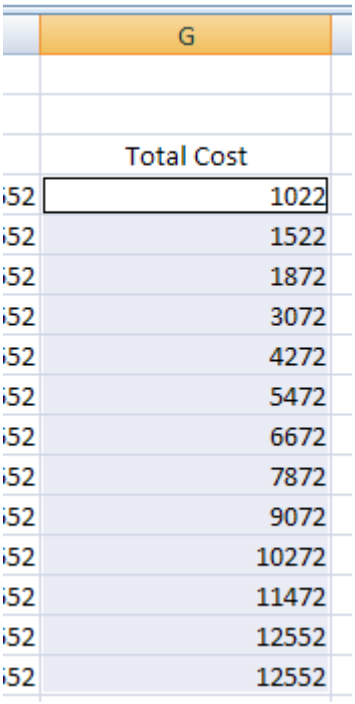
4. While holding the left mouse button down, drag the cursor to the last numeric entry under the Total Medical Charges. The black selection outline will encompass all of the Total Medical Charge values in the column.



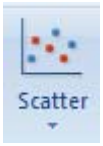
	A	B
1	**Basic Plus Plan**	
2		
3	Total Medical Charges	Prescriptio
4	350	
5	850	
6	1200	
7	4200	
8	7200	
9	10200	
10	13200	
11	16200	
12	19200	
13	22200	
14	25200	
15	27900	
16	31200	
17		

5. Press and hold the CTRL key on your keyboard.

6. Click on the first numerical entry under Total Cost (in this example G4). While holding the left mouse button down, drag the mouse to the last numerical entry in this column (in this example G16). As you do this you'll notice that the numbers in column A and in column G are being highlighted letting you know that you have selected entries in both columns.

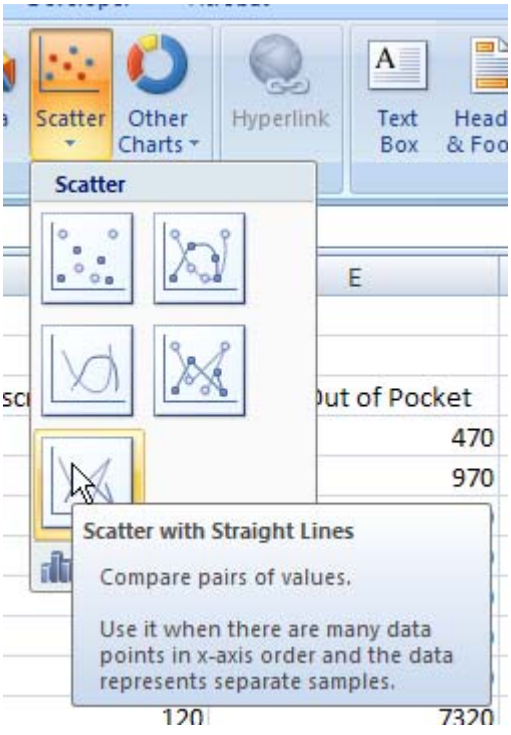


7. Click on the Insert tab along the top of the Excel window. Locate the Charts panel.

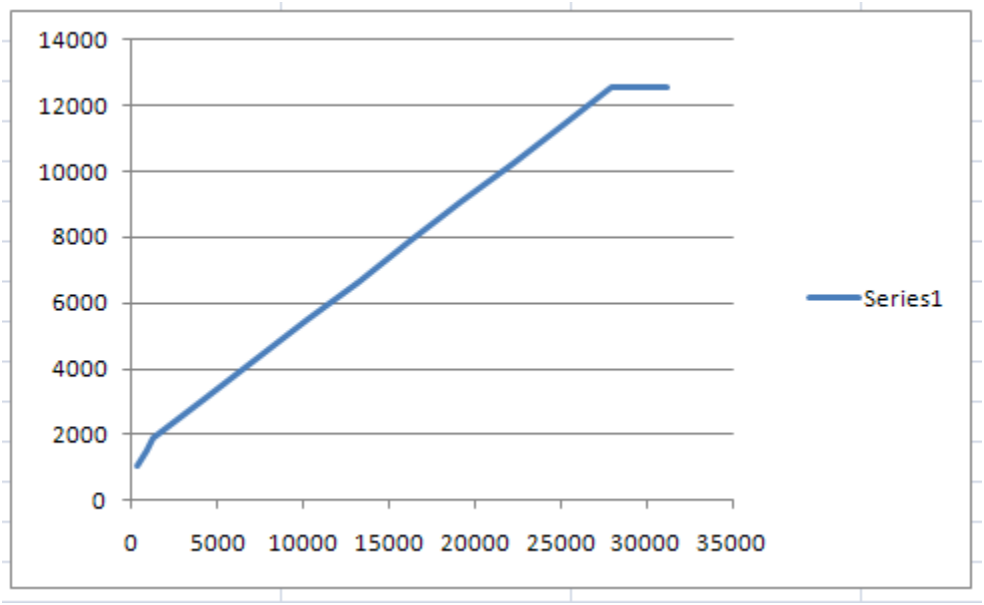
8. Within the Charts panel is a button 

for creating Scatter Plots. Click on the Scatter button to reveal several different types of scatter plots that Excel is able to make with the two columns of data we have selected.

9. Select the scatter plot at the bottom, Scatter with Straight Lines. This button will graph the selected data as ordered pairs and then connect the points with straight lines. The points will not appear as dots on the graph.



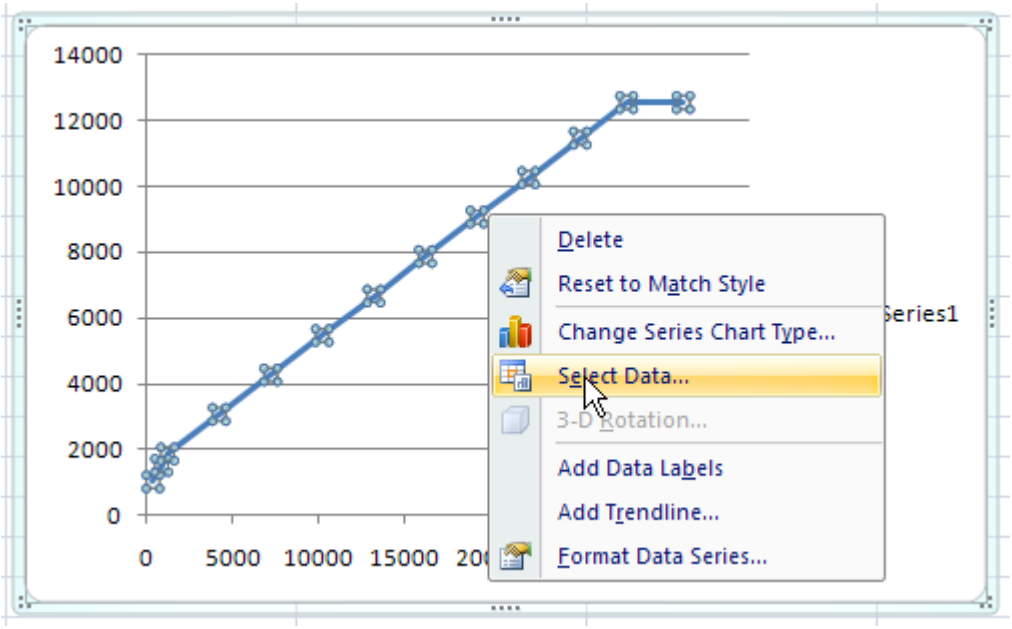
10. Your graph will appear below the table. If it is not in a convenient location, click on the edge of the graph. While holding the left mouse button, you may drag the graph to a better location.



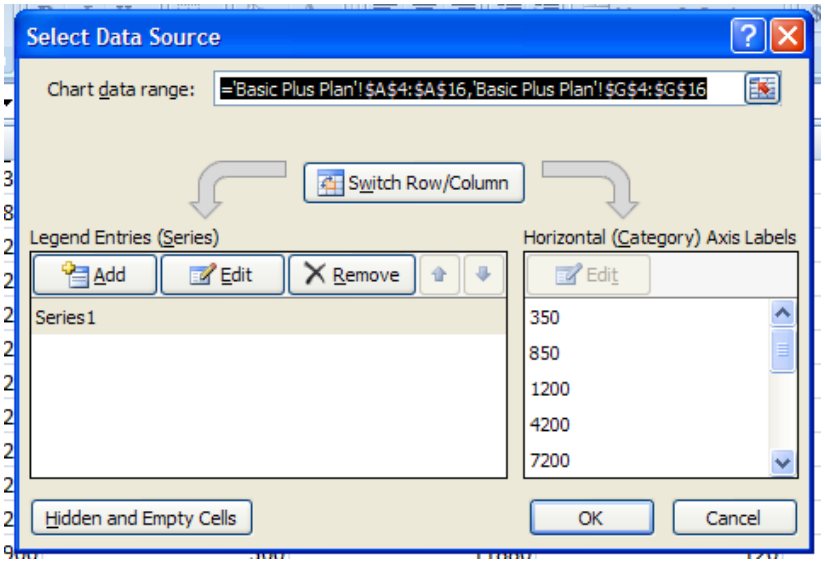
This is a good initial graph, but we should modify it with axes labels, a more accurate legend, gridlines, and a better window.

11. Let's start by modifying the legend on the right side of the graph. The name "Series 1" is not very useful. We would like to have the legend reflect the nature of the graph. Move the cursor over the blue curve on the graph and right mouse click. You should see a menu like the one shown below. If you do not see Select Data in this menu, move your cursor to a slightly different location on the graph and try right clicking again.

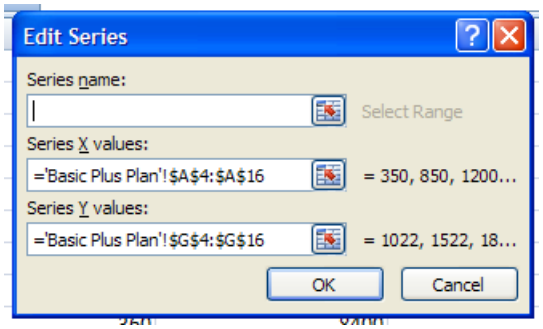
12. Choose Select Data from the menu with your mouse.



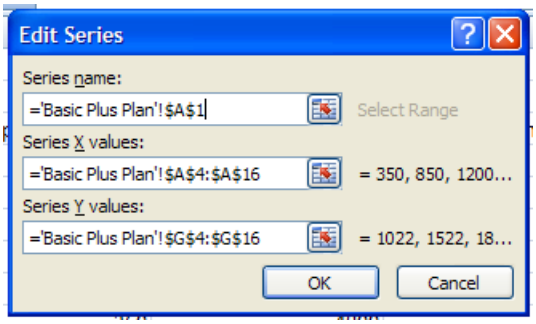
13. The Select Data Source box will appear. Using this box we can edit where the data for the graph comes from, add another set of data to the graph, or delete a set of data from the graph. Since we want to edit the existing data, click on the data labeled Series 1 on the left and select the Edit button.



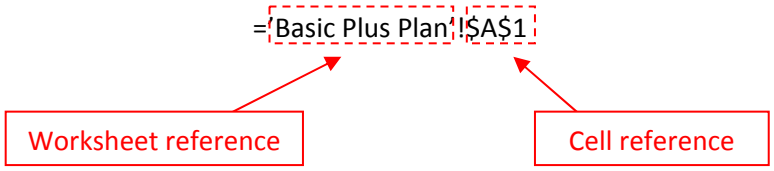
14. From this box we could change the location of the data if we wanted. However, in this case we simply want to give the graph a name.



Notice that the insertion point is under Series name. To put the name of the health plan on the graph, click on the cell containing the name of the health plan, A1.



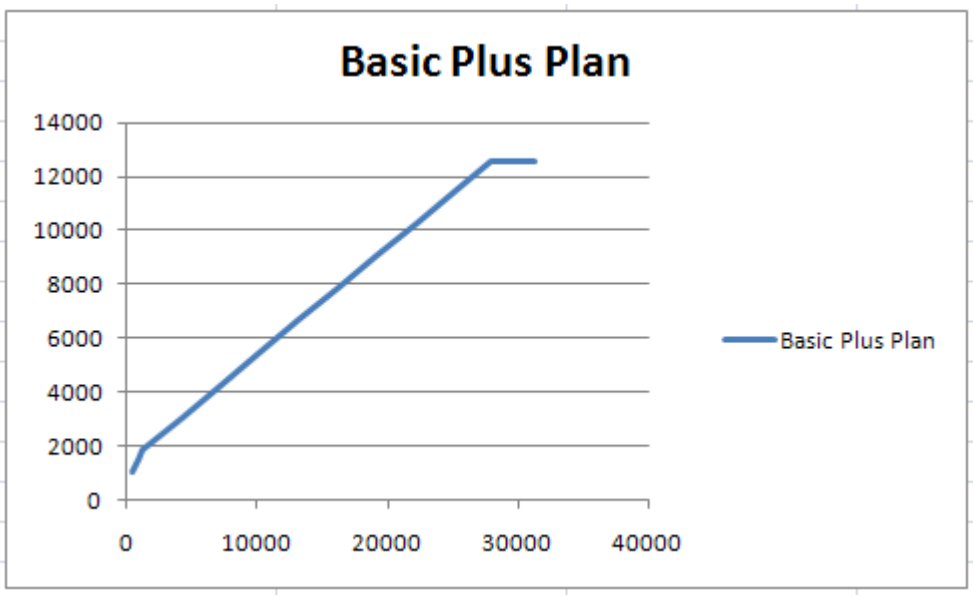
Examine closely what was pasted into the space below Series name. The text after the = sign is called a reference.



The reference shown here consists of two parts, a worksheet reference and a cell reference. The worksheet reference is separated from the cell reference by an exclamation point. If you are working exclusively in a single worksheet, the worksheet reference may be left off leaving the cell reference alone. A reference helps you to point to a particular cell or set of cells in a worksheet.

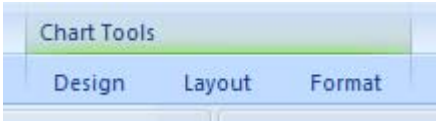
The dollar signs in front of the cell location make this cell reference into an absolute cell reference. For an absolute cell reference, the location referred to is fixed and will not change. When a reference does not contain a $ sign it is a relative cell reference. When a cell with a relative reference is pasted to another place in the worksheet, the cell location that is pasted is relative to the location it was copied from. . Absolute references are used throughout the Edit Series boxes since we want the name of the graph and the data in the graph to be fixed.

15. Click OK to update the graph.

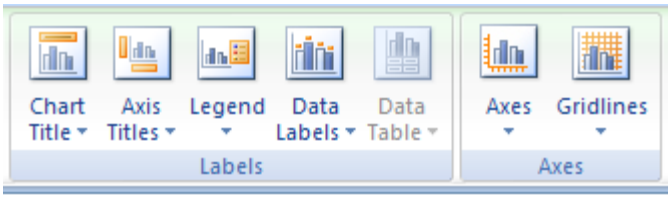


There is now a title on the graph and a legend reflecting the plan name in cell A1.

16. Now let's change the layout of this graph. Most of these layout options are accessed by first clicking on the outside of the graph to select it. Notice that the tabs along the top of the Excel window changes slightly. Now there is an option for Chart tools. Select the Layout tab.

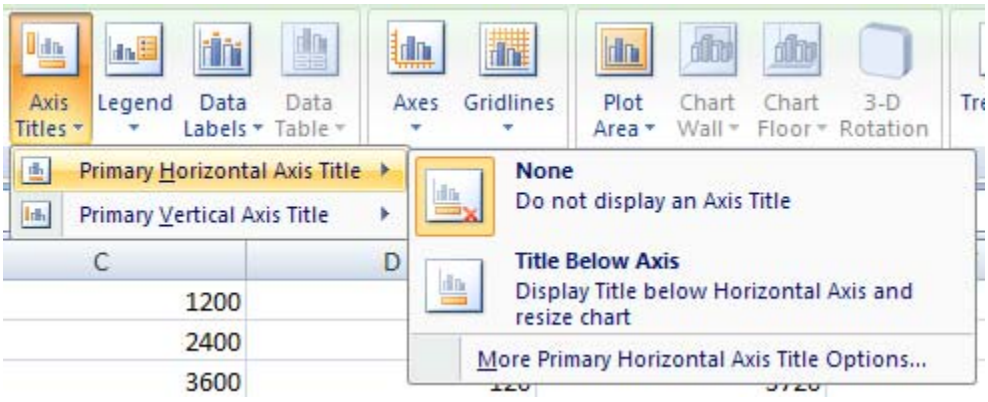


17. The panels for Labels and Axes are useful for making changes to the data and axes labels as well as adding gridlines.



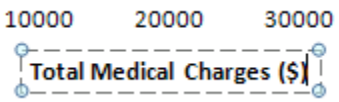
Click on the Axis Titles button.

18. This reveals a series of options for adding labels (called titles in Excel) to the graph. Select Primary Horizontal Axis Title and then Title Below Axis to add a label to the horizontal axis.



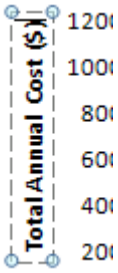
19. A small box should appear below the horizontal axis. Click in this box to edit the title.

20. For this particular graph, the horizontal axis represents the total amount of medical charges in dollars. Type a label for your graph. A good label will have a descriptive title, like Total Medical Charges, and the units corresponding to this quantity in parentheses.

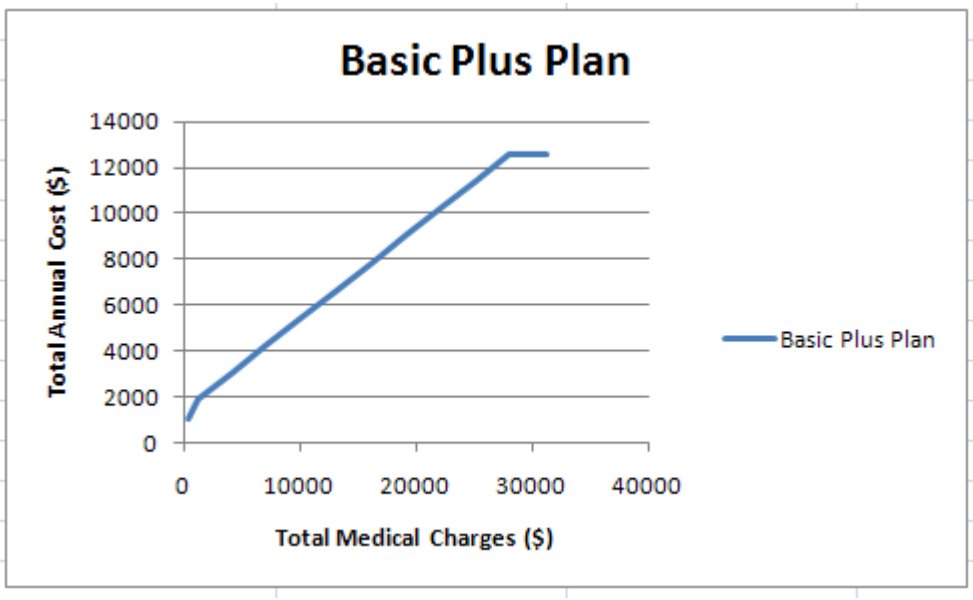


21. Select the graph again by clicking on it (it may already be selected) and go back to the Labels panel as in step 20. Let's put a label on the vertical axis by selecting Axes Titles. This time pick Primary Vertical Axis Title and then Rotated Title.

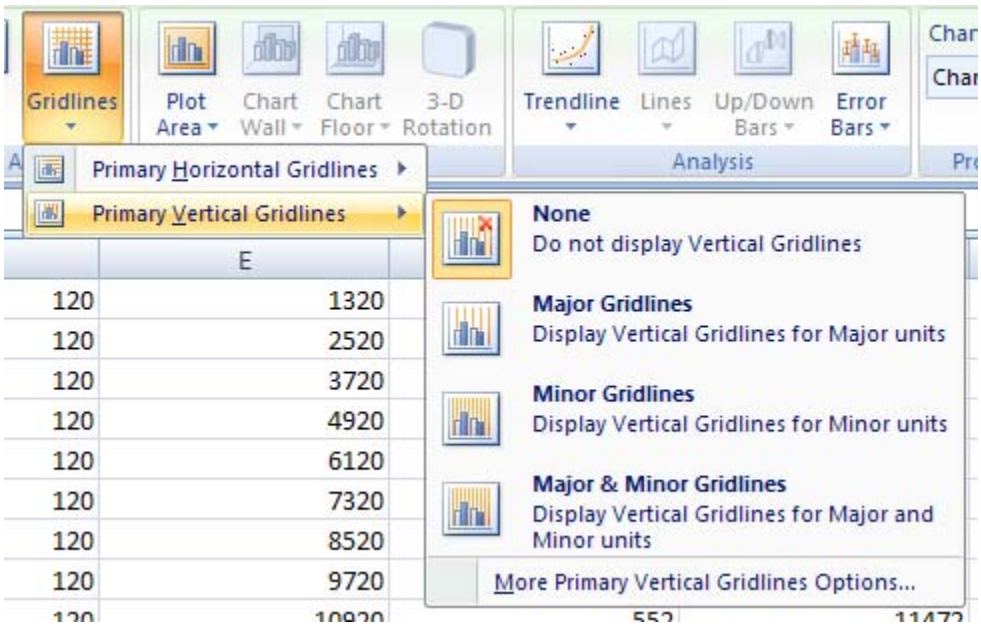
22. This will add an axes label along the vertical axis. Click on this title and edit it to reflect the quantity corresponding to the vertical axis.



23. After this change in the layout, you should have a graph like the one shown below. Your graph might have a different curve, but the title on the graph, legend, and axes titles should be similar to the one below, but with wording to match your first health insurance plan.

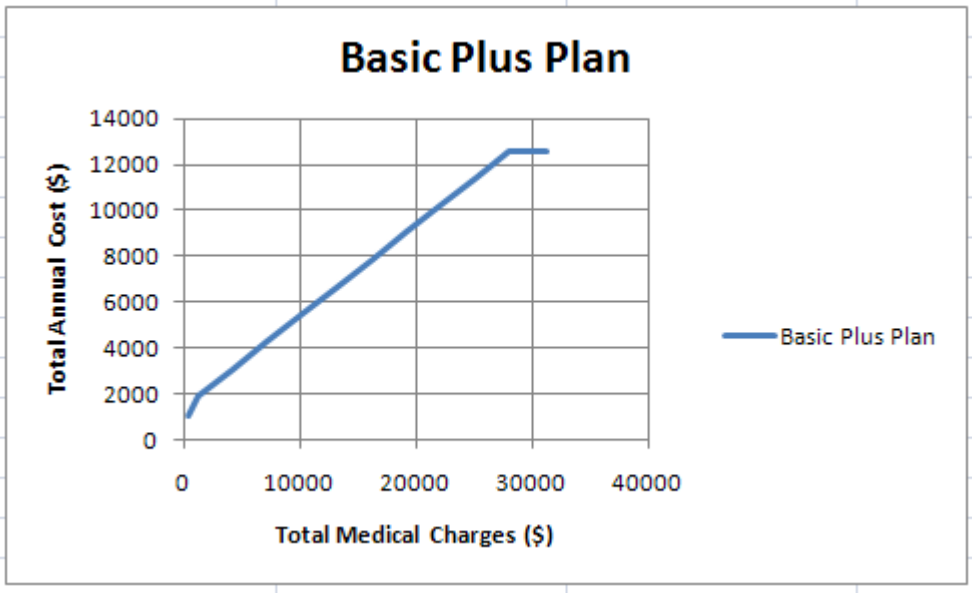


24. To add vertical gridlines to the graph, make sure the graph is selected. On the Chart Tools Layout tab locate the Gridlines button in the Axes panel. Click on the Gridlines button and select Primary Vertical Gridlines. Now select Major Gridlines.



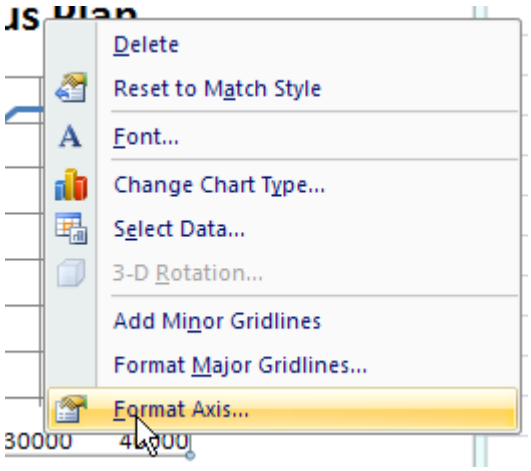
This will add gridlines to your graph wherever there is a number along the horizontal axes.

25. Your graph should now have vertical and horizontal gridlines like the one below.

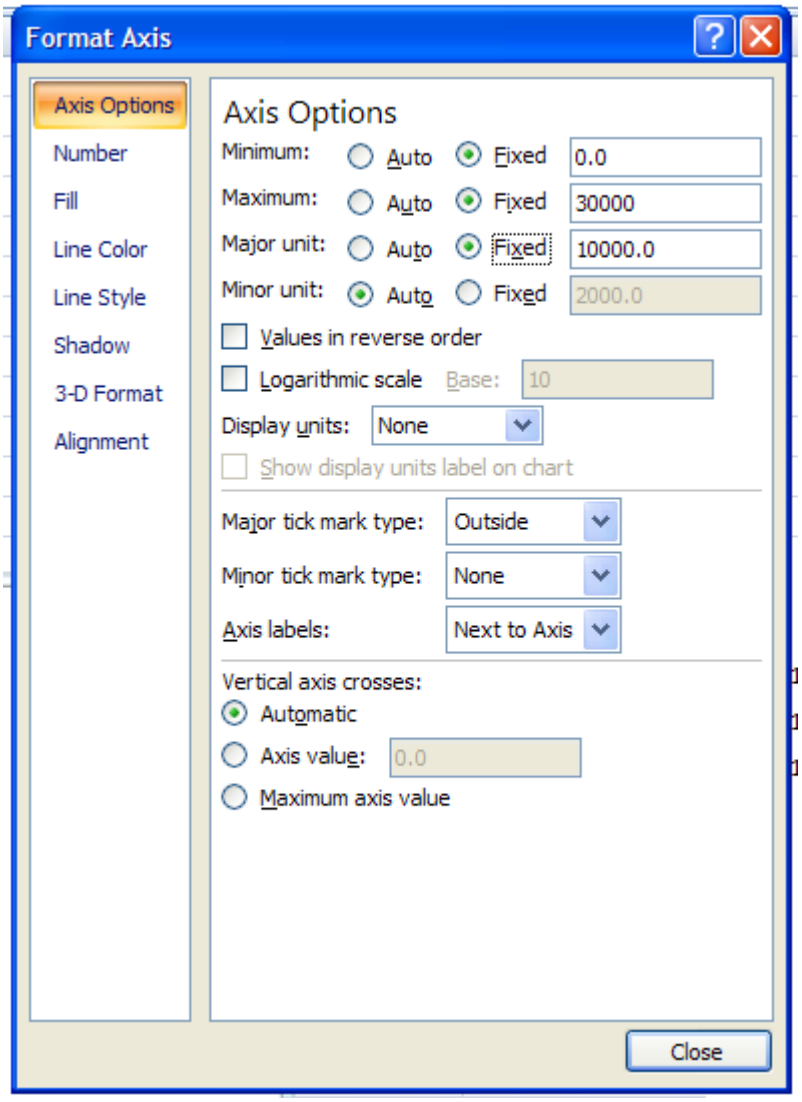


Our last task is to modify the window of the graph so that it better fits the curve. This graph fits the vertical window perfectly, but could fit the horizontal window better if it ran from 0 to 30,000. Look at your graph determine how you could modify your graph's window.

26. You can modify the window horizontally by right clicking on the numbers along the horizontal axis. You can modify the vertical window by right clicking the numbers along the vertical axis. When you do this, you'll see a menu of choices. Select Format Axis.

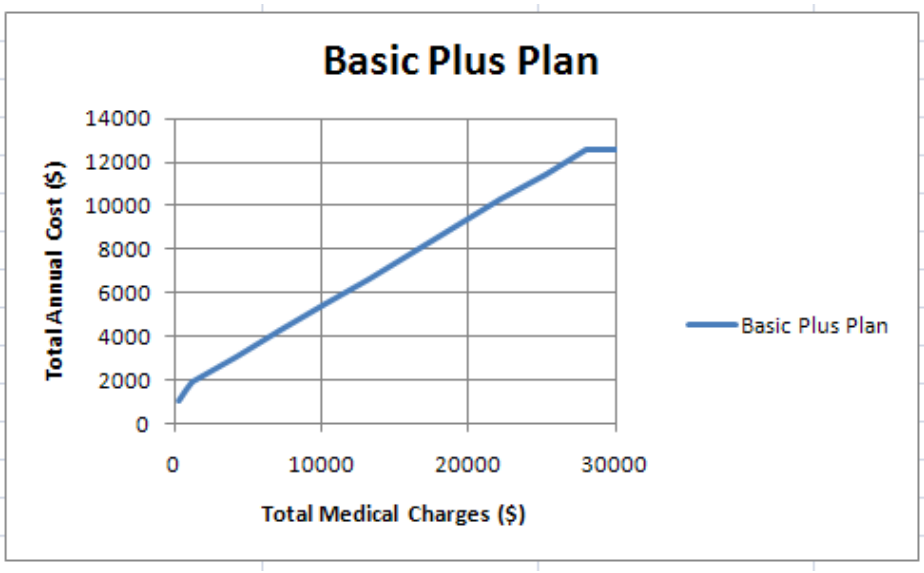


27. The Format Axis box will appear. To modify the window, we'll need to select Fixed for the Maximum, Minimum, and Major Unit. In the box next to each of those options, we'll put the extremes of the window. Since we want the window to run from 0 to 30,000 horizontally, set the Minimum to 0 and the Maximum to 30,000. The Major Unit defines the increments between the numbers along the axis. If we set the Major Unit equal to 10,000, the axis will be labeled at 0, 100000, 20000, and 30000.

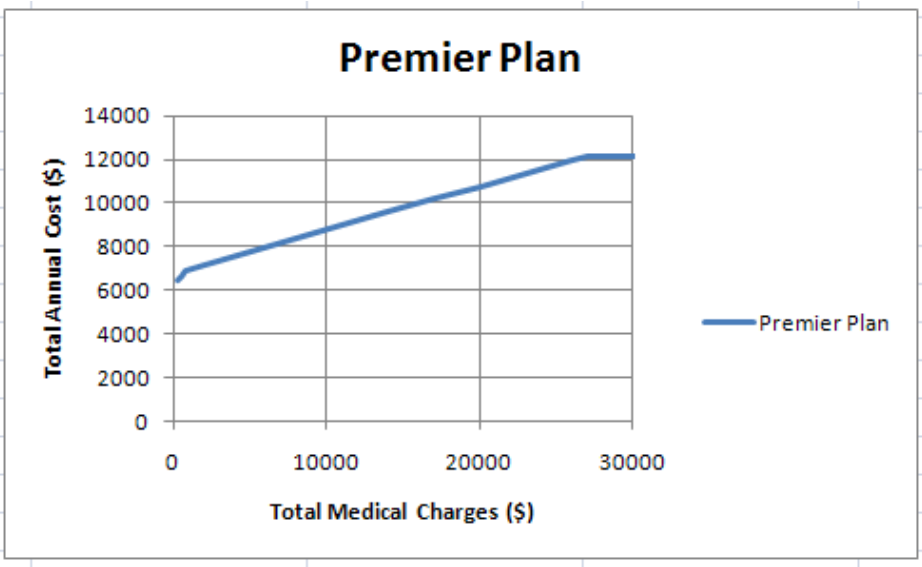


The Minor unit defines the increments between the tic marks between the numbers. This amount can be changed, if desired, by selecting Fixed and modifying the number in the box. This number must be smaller than the Major unit.

28. Click Close at the bottom of the Format Axis box to update the graph. Notice how the graph fills the horizontal window of the graph better than it did before.



29. Now that we have modified the layout of the first health plan's graph, we need to follow the steps to create a graph for the second health insurance plan. You'll need to start by selecting the worksheet for the second health plan. Modify the layout in the same manner as the first health plan, but with a title and legend appropriate to that plan. Make sure you use the same Axes Titles and window as the first plan. For our second plan, we would end up with a graph like the one below.



30. Make sure you save you Excel file. This file is what you will submit for this technology assignment.